UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,392	04/14/2005	Toshiharu Nishino	05234/LH	1221

1933 7590 01/29/2008

FRISHAUF, HOLTZ, GOODMAN & CHICK, PC
220 Fifth Avenue
16TH Floor
NEW YORK, NY 10001-7708

EXAMINER	
DUONG, THOI V	
ART UNIT	**PAPER NUMBER**
2871	

MAIL DATE	DELIVERY MODE
01/29/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,392	NISHINO ET AL.	
	Examiner	Art Unit	
	Thoi V. Duong	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) *7,8 and 17-19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 9-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/14/05 and 7/18/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species I, claims 2-6, 15 and 16 in the reply filed on December 19, 2007 is acknowledged.

Accordingly, claims 7, 8 and 17-19 are withdrawn as non-elected claims and claims 1-6 and 9-16 are considered in this office action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 3-5, 12 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Wei (US 6,674,496 B2).

Re claim 1, as shown in Figs. 2-5, Wei discloses a liquid crystal display device comprising:

a first substrate (54, 84, 106) and a second substrate (46, 76, 96) which are arranged so as to oppose to each other;

at least one first electrode (48, 78, 98) which is formed on one of opposing internal surfaces of said first substrate and said second substrate;

a plurality of second electrodes (52/52a, 82, 102) which are formed on the other of the opposing internal surfaces of said first substrate and said second substrate, and which form a plurality of pixels arranged in a matrix in an area opposing to said first electrode on the one internal surface (col. 3, lines 13-18 and 54-60, and col. 4, lines 5-9; see also Fig. 1);

a liquid crystal layer (50, 80, 100) which is sealed in a predetermined gap between said first substrate and said second substrate (see also Fig. 1);

a pair of polarizing plates (56/44, 86/74, 108/94) which are arranged so as to sandwich said first substrate and said second substrate;

reflection/permeation means (52/52a, 82, 104) which is provided between said liquid crystal layer and one of said pair of polarizing plates, and which reflects a part of a light coming to each of said plurality of pixels and lets the other part of the light permeate said reflection/permeation means or layer (col. 3, lin 19 through col. 4, line 9); and

a surface light source (42, 72, 92) which is arranged so as to oppose to the other of said pair of polarizing plates, and which emits a light toward said opposing other polarizing plate, and lets lights coming to said surface light source from a side of the

opposing other polarizing plate and from a side opposing to this side permeate said surface light source (Fig. 3).

Re claim 3, said reflection/permeation means (52/52a, 82, 104) is arranged on the internal surface of said first substrate (54, 84, 106) or said second substrate (46, 76, 96) on a side of said one polarizing plate (56, 86, 108).

Re claim 4, said reflection/permeation means (52/52a, 82, 104) is constituted by a reflection film having an open portion (52a) and a reflection portion (52) formed for each of said pixels to constitute a partial reflection/permeation layer which reflects, of a light coming to each of said pixels, a light that comes to said reflection portion, and lets a light that comes to said open portion permeate said reflection/permeation means (Fig. 3).

Re claim 5, said partial reflection/permeation layer (52/52a) is arranged on the internal surface of said first substrate (54) on a side of said one polarizing plate (56).

Re claim 12, as shown in Figs. 2 and 3, Wei discloses a liquid crystal display device comprising a liquid crystal element comprising:

a first substrate (54) and a second substrate (46) which are arranged so as to oppose to each other;

at least one first electrode (48) which is formed on one of opposing internal surfaces of said first substrate and said second substrate;

a plurality of second electrodes (52/52a) which are formed on the other of the opposing internal surfaces of said first substrate and said second substrate (46), and

which form a plurality of pixels arranged in a matrix in an area opposing to said first electrode on the one internal surface (col. 3, lines 13-18; see also Fig. 1);

a liquid crystal layer (50) which is sealed in a predetermined gap between said first substrate and said second substrate (see also Fig. 1);

a pair of polarizing plates (56, 44) which are arranged so as to sandwich said first substrate and said second substrate;

a reflection/permeation layer (52) which is provided between said liquid crystal layer (50) and one of said pair of polarizing plates (56, 44), and which forms a reflection display region for reflecting a light coming to a region predefined in each of said plurality of pixels, and a permeation display region for letting a light coming to other than the reflection display region permeate said reflection/permeation layer (Fig. 3 and col. 3, lines 19-39); and

a surface light source (42) which is arranged so as to oppose to the other of said pair of polarizing plates (44), and which emits a light toward said liquid crystal display element, and lets lights coming to said surface light source (42) from a side of the opposing other polarizing plate (44) and from a side opposing to this side permeate said surface light source (42).

Re claim 16, said first and second electrodes (52a, 48) are made of transparent electrodes (col. 3, lines 13-15); and said reflection/permeation layer 52 comprises a reflection film which is formed so as to correspond to the reflection display region and the permeation display region of each pixel (Fig. 3).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 9-11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei (US 6,674,496 B2) in view of Motomura et al. (Motomura, US 6,456,347 B1).

Re claim 9, Wei discloses the pair of polarizing plates (56, 44) comprising retardation plates. However, Wei does not disclose at least one retardation plate arranged between said pair of polarizing plates.

As shown in Fig. 4, Motomura discloses a liquid crystal display device having retardation plates (14, 12) arranged between a pair of polarizing plates (15, 13).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display device of Wei with the teaching of Motomura by arranging at least one retardation plate between the pair of polarizing plates in order to offer satisfactory display performance both in the reflective mode and in the permeative mode (col. 2, lines 36-42).

Re claims 10 and 13, two of said retardation plates (14, 12) are arranged so as to sandwich the first substrate (22) and the second substrate (21) as shown in Fig. 4 of Motomura.

Re claims 11 and 14, Motomura further discloses that a scattering layer (35) is provided between the liquid crystal panel (11) and the retardation plate (12) in order to have a greater viewing angle and greater viewable area for image display (col. 7, lines 42-55). Accordingly, it is obvious that the scattering layer (35) is arranged between the other polarizing plate (12) and the first substrate (22) or said second substrate (21) on a side of said other polarizing plate (12) shown in Figs. 4 and 5.

6. Claims 2, 9, 10, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei (US 6,674,496 B2) in view of Shimuzu et al. (Shimuzu, US 6,341,002 B1).

Re claim 15, Wei discloses a liquid crystal display device that is basically the same as that recited in claim 15 except that a part of said liquid crystal layer that corresponds to the reflection display region is thinner than a part of said liquid crystal layer that corresponds to the permeation display region.

As shown in Fig. 1A, Shimuzu discloses a liquid crystal display device comprising a liquid crystal layer (140), a reflection display region (120R) and a permeation display region (120T), wherein a part of said liquid crystal layer (140) that corresponds to the reflection display region (120R) is thinner than a part of said liquid crystal layer (140) that corresponds to the permeation display region (120T) (col. 6, lines 53-67).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Wei with the teaching of Shimuzu by having a part of said liquid crystal layer that corresponds to the reflection display region being thinner than a part of said liquid crystal layer that corresponds to

the permeation display region in order to render the length of an optical path of the reflected light in the reflection display region substantially equal to that of transmitted light in the permeation display region (col. 6, lines 56-63).

Re claim 2, as shown in Figs. 1A and 1B of Shimizu, the reflection/permeation means is constituted by a half-transparent and half-reflection film (68, 69) which reflects and allows permeation of an incident light with a predetermined reflection ratio and a predetermined permeation ratio (col. 11, lines 17-19).

Re claims 9, 10 and 13, Shimuzu discloses two retardation plates (170, 180) arranged between a pair of polarizing plates (172, 182) so as to sandwich the first substrate (61) and the second substrate (162).

7. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wei (US 6,674,496 B2) in view of Kaneko et al. (Kaneko, US 6,693,692 B1).

Re claim 6, Wei discloses the reflection/permeation layer constituted by a metal reflection film (52) in which an opening (52a) is formed for each pixel; however, Wei does not suggest the opening having a predetermined size.

As shown in Fig. 8 and 9, Kaneko discloses a reflection/permeation means (14) (transflective reflector) constituted by an aluminum film in which an opening (14a) is formed for each respective pixel, wherein the area of the respective opening (14a) is predetermined to represent 30% of an area of the respective pixel, thereby allowing about 30% of light rays to be transmitted, and remaining about 70% of the light rays to be reflected (col. 13, lines 22-44).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Wei with the teaching of Kaneko by forming a reflection/permeation layer having an opening with a predetermined size in order to determine the amount of light rays to be transmitted as well as the amount of light rays to be permeated (col. 13, lines 34-44).

Accordingly, re claim 2, Kaneko clearly suggests that the reflection/permeation means is constituted by a half-transparent and half-reflection film which reflects and allows permeation of an incident light with a predetermined reflection ratio and a predetermined permeation ratio (col. 13, lines 39-44).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

Thoi V. Duong – Primary Examiner

January 19, 2008